MG 20.1: The Finest Speaker In The World.

For some, the passion for music can go to "extremes." However, what is extreme to one music lover seems sensible to another. To those who enjoy movies, an entire room (not to mention the cost), can be devoted to have the "theater experience" at home.

To the music lover, the MG20.1 is the best and most cost effective way to have the "concert experience" at home.The MG20.1 has wide dynamic range and deep bass response, but what separates the MG20.1 from all other assaults on "state-of-the-art" is resolving power.

Jonathan Valin, of Fi Magazine, said in December, 1998, Volume 3, Issue 12,

"So what have we got here? A big planar speaker that throws the widest, deepest, tallest, most coherent soundfield I've heard from a hi-fi system, filled with the most naturally-sized instruments I've heard from a hi-fi system, with the sweetest, most natural timbres I've heard from a hi-fi system, the finest dynamic nuance I've heard from a hi-fi system (particularly in the treble), and the most natural illusion of instrumental "action" I've heard from a hi-fi system. What we've got here, in sum, is "realistic reproduction" in the highest sense of the phrase, in the sense I spoke of earlier, the virtual duplication of instruments and voices rather than mere analogs of certain aspects of their sound....While it's hard to call anything that costs over ten grand a bargain, I can tell you this; if it were my money, and I were shopping for the very best, these are the speakers I'd buy."

The MG20.1 has optional bi-amplification and bi-wire capability.

MG 20.1	
Description	3-Way / Ribbon Tweeter - Planar-Magnetic
Freq. Resp.	25-40kHz ±3dB
Rec Power	Read Frequently Asked Questions
Sensitivity	85dB/500Hz /2.83v
Impedance	4 Ohm
Dimensions	29 x 79x 2.062

Available in natural or black solid oak trim, off-white, black or grey fabric. (Dark Cherry trim available at an extra charge)

Magnepan MG-20.1 Loudspeaker

Scrambling around to find out what I had said about the original version of Magnepan's MG-20, I was a bit startled to learn that this top-of-the-line Maggie was introduced a decade ago. Ten years is an audio lifetime between model improvements, and while the Point One was shown at the Consumer Electronics Show in Las Vegas two years ago, it is just now making its way to the marketplace. It seemed obvious that designer Jim Winey wanted to produce something special and to make a statement.

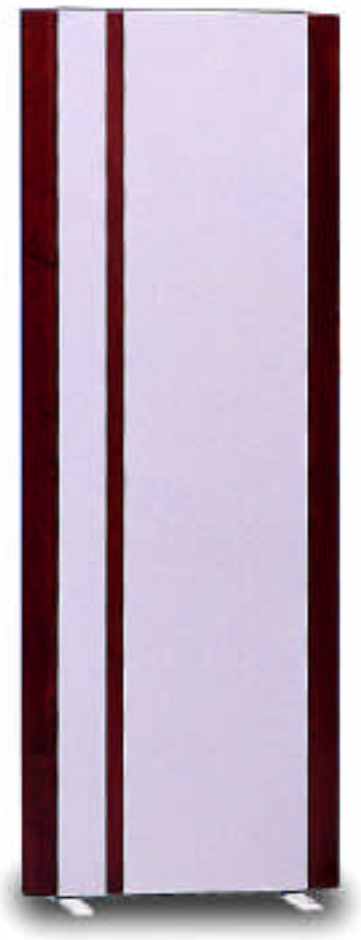
After reading my capsulized review [Issue 83/84], I wanted to kick myself. It might not have been such a bad thing if I had, as I said I would do, continued with an in-depth follow-up. But I never did. Bad, bad boy, you HP you.

The one thing that made it difficult for me to come to grips with the original 20 was the way its bass panels would "flap" if jolted with a sharp low-frequency transient. Organ pedal-points it could handle, and handle to several frequencies below the 32 mark, but a whack on a bass drum or some such would lead to the grossest "mistracking."

And it isn't that I didn't want to keep these Maggies as a reference. There was not, at that time, another speaker on the market—that I had heard—lower in overall tonal coloration, from top to bottom of the spectrum. They sounded more natural than anything else in my listening experience. And that legendary Winey-designed ribbon tweeter lent the top half of the soundfield a transparency (in the real sense of that word, which is a Zen-like absence of things between you and the music) unduplicated by any other high-frequency reproducer in the audio world of 1992.

These things I said then.

What I should have gone on to discuss were other aspects of the speaker—a three-way system—that were more troublesome and challenging, shortcomings that would point the way for future improvements. To wit:



There were discontinuities between its three drivers. For a design of its day, these would have been considered quite minor. But we have all learned better since then, thanks to much-improved speaker designs. In retrospect, the discontinuities and coherency problemski can be more easily analyzed.

Matching the speed of response and the purity of that ribbon tweeter would be no easy task for its then single-ended midrange planar design (not a true "ribbon"). And arrestingly enough, matching that single-ended midrange to the push-pull design of the speaker's bass panels was almost as challenging, less so in sonic terms than in dynamic ones.

Brief sermonette: I've argued in an essay on dynamics that, metaphorically, we must, if audio design is to advance, separate the frequency domain from that of time, particularly time as seen through the lens of dynamics. Early Magnepan designs, particularly the top-end Tympani series that Winey designed for Audio Research, were limited in both senses, but actually more in the resolution of dynamics. These speakers could play loudly (and in point of aural fact, they sounded their best only when played well above an equivalent concert-hall level), but were dynamically dead during softer passages.

In the original MG-20, the dynamic response of the three drivers was different, with the tweeter being not only "faster" but able to resolve dynamics into the mezzo-

forte region.* The midrange section of the original was dynamically the most compressed (the "slowest," if you will), while the bass panel, despite the flapping, was dynamically more responsive. If you're ahead of me, you can readily guess that the midrange of the 20 sounded somewhat veiled in comparison with the elements at either end of the frequency range, even as it exhibited quite low coloration, or what I would call freedom from character.

In subsequent reviews of other Magnepan speakers, I found a 7kHz resonance in the tweeter to be a highly glamorous coloration, lending, as it did, a sweet, silvery shimmer at just the right point in the overtone structure. It was there in the original as well.

■■■

In evaluating the 20 Point One system, I returned to Music Room 2, which has long been a happy home for Magnepan designs. I have, for instance, always been able to get considerable bottom-octave response, and flat response down to the 30Hz point, which, given the boxless nature of all Maggie designs, sounds more impressive than you might suppose.

Perhaps it is the room's roughly shoe-box shape that allows the speakers to "couple" well therein, and perhaps its opposite end irregularities (a bay at the one, a back wall/walkway at the other) that help break up the nodes that can play such havoc with a speaker's sound. In measurements of the room, done by David A. Wilson and others, it would appear that the only measurable nodal resonance can be easily avoided if one simply avoids the bay area of the outside wall. (It is not a particularly significant resonance, in any case, unlike Room 1, created after the Fire, which is nightmarish in this respect.)

I used the Rule of Thirds to locate the speakers, using the tweeters as the focal point for the one-third point.** As usual, I had to fiddle after I got the speakers to obey the Rule of Thirds. Magnepan recommends a slight inward cant to achieve correct time alignment, and we found, after trying them firing forward, that this was best in our setup. The fiddling consisted of achieving the exact focal point where speakers and room *coupled*. This process can madden those who want

to just stick the things somewhere and, voila!, perfect sound forever. But the sonic improvements one can achieve by taking the time to set them up optimally are so audible, it justifies the time. (You may wish, as I routinely do here, to use transparent tape to denote the exact positioning of the speakers in case they get moved—not difficult to do since they are more bulky in size than heavy. And sometimes you may want to move the speakers aside if you need extra room for doing whatever comes naturally.) I found, in my particular set-up, that the tweeter strip had to be attenuated—provision is provided for doing this, but things would have been easier if one could have just thrown a switch. Operating in its "flat" position, there was entirely too much treble energy, which might not have been so objectionable if the sound hadn't been so raspy and edgy. I also opted to close the drapes in the bay area behind the speaker, thus damping the rear wall and providing additional image focus and specificity. That move may have cost me something in the way of a kind of depth-of-field that all dipole radiators simulate. But, of late, I've been asking myself whether the simulation is a replication of the signals on the discs or just a lovely (in some cases) enhancement of that.

One additional thought: Maggies take a long while to break-in, particularly the bass panels. My pair has been around. They are two years old. Winey says there is no bass-panel "flap" once the speaker settles in, which may take several hundred hours. For sure I can tell you that any Magnepan design sounds better and better over time, sort of like the Bordeaux wines the French made 40 years ago.

The Point Ones can be either biwired or biamplified. Winey himself prefers biwiring, although he says he is at a loss to explain why, technically, the speaker sounds better that way. This can be achieved through its external crossover network, whose connecting apparatus Scot Markwell intensely dislikes.[1] And I used, in the initial round of evaluation, many a different component. Sometimes to the speakers' advantage; sometimes not. What remained constant were the Nordost Valhalla connectors, which are, in my experience, sonically invisible in every system in which they are used. Otherwise, we ran the gamut. In full-featured preamplifiers, that meant the Burmester 808 Mk V; in line stages, the Wyetech Opal and Conrad-Johnson ART II; in CD decks, the Gamut CD-1 and the new Burmester 001; the amplifiers, the Plinius SA-250, the Gamut 250 monoblocks and the Gamut 200 stereo amp, the Halcro DM-68, and the Joule Electra Rite of Passage. And we will use more in upcoming listening sessions, since I am so intrigued with the Point One.

I have to confess that I have no real fix on why the Maggies sound less than pleasant with some combinations of componentry. Be that as it may, the speakers could sound raw and edgy in the crossover region between tweeter and midrange, that is, circa 3kHz. I know Winey uses solid-state components in designing and fine-tuning his speakers (which is why, dear children, the speakers sound so good with solid-state), so I asked if he could think of any reason for the unpleasant interactions I was sometimes getting. He could think of none, noting that the crossover designs were relatively simple and "ought not to provide any difficulty" for components driving the speakers. I'd like to report that I have gotten to the bottom of these and could make specific recommendations about combos to avoid with these speakers, but . . .

During the final phase of my initial sessions, that is, almost at deadline for this issue, I had a massive system failure, possibly from a power surge (Sea Cliff is next door to the power plant and there are often huge voltage surges, some of which we have measured in the past), that took out one channel of the Burmester preamplifier (which I would have thought indestructible), the Wyetech Opal line stage's power supply, and one of the Gamut monoblocks, as well as one channel of the Edge NL-10 stereo amplifier. And so, I asked Scot to insert the Conrad-Johnson line stage and Joule Electra O(utput)T(ransformer)L(ess) monoblocks, to rather spectacular effect. But clearly, there is much more assessing to be done.

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* I am going to have to use musical annotations to describe the dynamics of the spectrum. That's because we have nothing like a more precise—or scientific—language for discussing dynamic gradations. So when I say *mezzo-forte*, or *mf*, I am talking about passages of average loudness; *p* stands for *piano*, or soft,but there are four degrees of that,with the softest sounds being *pppp*; *f* stands for *forte*, which is loud,while *ffff* is as loud as it can get. No audio equipment with which I am familiar can satisfactorily encompass the full range from *pppp* to *ffff* without compression or distortion, although highly efficient speakers,particularly those that are horn-loaded,come close.

** If you are in doubt about the best placement for any speaker system,other than an exotica of questionable origin,it is best to start at the one-third points. That is,the speakers should be placed one-third of the distance into the room from the back wall,and each individual speaker at the one-third points from the side walls.

1 I am adamant on two particulars here: First,the "high-current" connectors Magnepan insists on using on both the speaker panels and the crossover box are,at the least,annoying, and at the worst,as in the case of the tweeter attenuator on the right-channel panel,nearly impossible to access unless one partially removes the inner-side "foot" of the speaker, a procedure fraught with danger to the speaker and adjuster, as well as a considerable pain-in-the-keester.

Second,as HP mentions,it would be far easier and sonically preferable,I imagine,if the tweeter level in each panel were adjustable via a small two-or-three-position slider switch,or the like,that would shunt the treble energy through an appropriate resistor, so that the user would not have to go through the contortions of inserting the flimsy, too-skinny legs of an ugly bar-type resistor into holes designed for 12 gauge or tinned bare wire. Whatever happened to the high-quality standard speaker lugs that "regular" speakers use? Also, the end user is required to manufacture his or her own jumpers that go from crossover to speaker panels. Depending on the type of metal and the construction of these jumpers,one can,as we learned to our dismay, alter the sound of the speakers,perhaps obviating somewhat the intended sonic goals of the designer. I think that it would be wise for Magnepan to provide its own properly terminated jumpers so that this step could be avoided. It took me an extra two hours of work just to make noise from the speakers because I had to find some suitable good-quality multi-strand copper wiring of sufficient gauge and then prepare it to work correctly with the speakers. **SM**

In a sense, to roll out an old cliché, I'm putting the cart before the horse in describing some of the changes that Winey has made to the 20s. These changes were perfectly obvious from the outset in my listening sessions.

The most significant one, from both a sonic and dynamic standpoint, lay in his decision (finally!) to operate the midrange driver in push-pull fashion, rather than single-endedly. To me, it was a curiosity that he designed the bass drive to work push-pull, but did not apply the same principle in the critical midrange.

In push-pull operation, he said, he got an increase in flux density "which brought the efficiency up, and with a little adjusting, we increased the speaker's transient capabilities. I also thought, let us use a little lower crossover point (to the bass driver), going from 250Hz to 200Hz and fairly gradually, with a knee under 150Hz in an 18dB-per-octave slope. This gave us a wider bandwidth in the midrange." Since there was more flux available, "the midrange was more linear, with a considerable increase in dynamics. The speaker didn't 'poop out' on loud passages."

At the other end of the spectrum, Winey limited the ribbon tweeter's response, crossing over at 3kHz, using a quasi 12dB-per-octave slope (it drops off at 6dB the first octave and then 12dB below that point). In olden Maggie designs, Winey would sometimes run the tweeter down close to the 1kHz point, with the result of many a burned-out ribbon. Now, he says, the ribbon is much the more foolproof.

For the moment, one more point: I asked what happened to the sound of the tweeter since the 7kHz shimmer was gone. Winey said that that resonance was caused by a mounting problem. He modified the mounting design and the sonic aberration disappeared.

I am not certain which of the design changes he described would account for the improvement we heard in the Point One's imaging depiction. With many a Maggie design, including that of the original 20, the speakers would create a soundstage that would place near-field instrumental images in places where they didn't belong (and where no other speaker system did). With the Point Ones, the near-field images are where they are supposed to be on the orchestral soundstage.

That said, at least up until this point in my evaluations, the Maggies (drapes closed) have not recreated a deep *sounding* field. Layered depth I have not yet achieved, nor that sense of the volume of a soundspace. Canting the speakers, as Magnepan suggests, may have played a role in this spatial peculiarity: In my experience, toeing speakers inward compromises the width of the stage, but not the depth. So this is another of the mysteries I have not been able to resolve, along with that of the anomalies with some component combos in the crossover region.

So where does that leave us?

Well, it leaves this writer certain that even if the Point One is touchy about the things behind it in the chain and even if there are some as yet unresolved spatial anomalies in the soundfield, it stands alone among contemporary speaker design.

Ten years ago, the original MG-20 sold for $8,600, which we thought as close to a steal as you could get short of burglary. Today's Point One sells for just $4,000 more and is far superior sonically to the impressive original. It is, in short, the best work that designer Winey has done in his 30 or so years at the drafting board. He himself says: "Now, I don't know why it took me 30 years to do certain things I did here. That's part of the art of it; it isn't all science you know. You learn things that aren't in the books."

The first thing the experienced listener is going to note upon listening to the Point One is its remarkable freedom from the colorations I sum up as "character." Which is to say the speaker is neither warm nor cold, yin nor yang, dry not wet. Now, these are some of the same words I used to describe the original MG-20 back then and it was the impression I took away with me and it was the way I have remembered the speaker over the years. But in this case, the purity and freedom from any discernible character has been pushed forward even further. It was, we might say, the most uncolored speaker of its day, that being a day when speaker colorations were more readily perceived.

If you listened to the original over time, you could have detected the node in the ribbon tweeters response, you would have become aware of a discontinuity in sound between the purity and transparency of the top octaves and the slightly veiled, somewhat clouded, and slower midrange, along with a less than perfect articulation of the lower midrange fundamentals.

So how does one, an audio writer for instance, come to grips with and describe even less of what already was in short supply?

Part II will run in an upcoming issue.

SPECS

Frequency response: 25Hz–40kHz +/-3dB
Recommended power: 100–250 watts
Sensitivity: 85dB/500Hz/2.83v
Impedance: 4 ohms
Dimensions: 29 x 79 x 2.062 inches

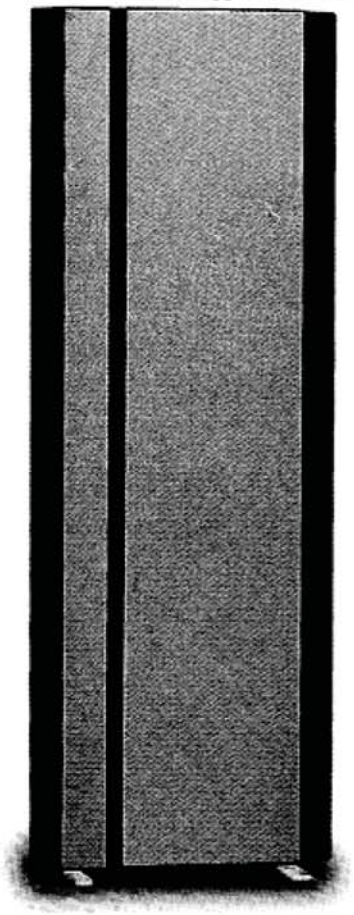
MANUFACTURER INFORMATION

Magnepan, Inc.
1645 Ninth Street
White Bear Lake, Minnesota 55110
Phone: (651) 426-1645
www.magnepan.com
Warranty: limited three years to original owner, extendable to five years
Price: $11,500/light oak; $12,000/cherry

III: The Magnepan MG-20.1 Speaker System

So exactly how does the new "statement" speaker from Jim Winey sound? That's the point at which we left off last time, and where we are supposed to start off this. Not that I think I'll be able to *exactly* describe its sound, because I'm just not sure I've heard it with just the right combination of components, one that will allow the speaker to achieve its fullest expression of magic.

It is the most neutral speaker that Winey has designed. And that is saying something. By comparison, most of the other speakers in the line, save the original 20, have had a light ecru-like and slightly veiled character or coloration. Since Maggie sounds are, per



Se, much more coherent—not to mention enclosure-free, ergo, no box artifacts—they have typically sounded less colored overall than almost every other competing design, though not as "pure" or as "fast" or as clean on the transient attack as a superb electrostatic (such being few and far between these days).

He made a breakthrough with his original ribbon, one incorporated into the original 20 and now into the 3.6. It was widely imitated, indeed directly, and without authorization, appropriated into the now-defunct Apogee speakers, which led to a court case, which Winey now says he regrets ever pursuing in the first place, given the cost in terms of time, money, and deflection from his work as a designer. But well it should have been the subject of envy the Magnepan ribbon demonstrated the full potential of a true ribbon (as opposed to so-called planar ribbons). For my parts, the Winey ribbon exceeded in every respect any other high-frequency reproducer in the world.

It also presented a problem. How do you find non-ribbons (a full range ribbon being, in the here and perhaps forever, a practical impossibility) that will mate in terms of speed and coherency with such a device? That was the challenge facing Winey in the design of the new 20.1.

And, in making the planar midrange unit of the original 20 into a push-pull design (as he had the bass panels in that version), Winey has achieved a degree of coherency that seems, from what he says, to have surprised even him. With a little help, of course, from an improved crossover design.

In the 20.1, I find it impossible to detect the transition point between the drivers, at least not from mismatches in the basic character of the sound. There are some discontinuities that are audible and they have to do with dynamics. The system does not breathe with equal dynamic authority in the three different parts of its frequency range. Nor do the middle frequencies, if you really listen with the most critical of ears, have either the incredibly low distortion of the ribbon or its freedom from a subtle, scrim-like veil that is translucent but not transparent.

Nor does it have that old "authority" in the mid-bass that made the original Magnepan designs for Audio Research—I'm thinking of the Tympani Ones—so lifelike. There just isn't the snapped twang on the string bass in, say, Cat Stevens' *Tea for the Tillerman* (mastered on the old Maggies) that was so hair-raising back then. What the bass does have is the ability to go shockingly low, given the relatively modest size of the speakers, reaching well down past the 32Hz mark, flat—in my room, which likes Maggies, and with a sufficiently powerful amplifier, which these insensitive speakers require if they are to come alive in the bass. Like so many Magneplanar designs, the speakers only come to life once you achieve a certain loudness. It's not like the old Maggies which you had to turn up well past equivalent concert hall levels to get the realism and punch of the real thing, but the speakers, however spectacular their resolution now is, still don't come alive at levels an electrostatic, like the Quad 63 or the old Beveridge's, could achieve.

Yeah, I'm being critical. But only because, once all is said and done, I believe this to be the world's best buy in speaker systems. They cost $12,000 the pair and they do not sound significantly inferior to the Alóns discussed above; indeed in terms of tonal neutrality and an absence of definable charactei; they exceed the Alón and just about everything else currently on the market.

But to get the best out of them, you are going to have to make sure they are well matched with equivalent gear. And that, gentle, gentle readers, will be the subject of the third and final part of this assessment.

MANUFACTURER INFORMATION Alón Exotica Grand Reference

Revised

Acarian Systems

181 Smithtown Blvd, Ste. 104
Nesconset, New York 11767
Phone: (631) 265-9577
www.alonbyacarain.com
Alonbyacarian@cs.com
Price: $120,000/system

Magneplanar 20.1 Loudspeakers Magnepan, Inc.

1645 Ninth Street
White Bear Lake, Minnesota 55110
Phone: (800) 474-1646
www.magnepan.com
wendell@magnepan.com
Price: $12,000/pair

Magnepan MG 20.1 Loudspeaker

A fresh look at a perennial audiophile favorite.

Donald Saltzman

You're probably asking yourself, "What can this guy tell me about Magnepan speakers that I don't already know?" After all, this magazine has reviewed various Maggie loudspeakers over the years—raves all—and the 20.1 is the basis of HP's favorite surround-sound system. Moreover, the $12,000 20.1 was *The Absolute Sound*'s Product of the Year in 2003. So what can a guy like me add? Just this: Having lived with the MG 20 and now the 20.1 for a combined 13 years, I'm hoping I can provide some real-world insight to anyone looking for a state-of-the-art loudspeaker at a fair price.

The 20.1 is tall, thin, and sexy (my longed for, but never attained, physical state).

Magnepan's flagship, the 20.1 is tall, thin, and sexy (my longed for, but never attained, physical state)—the audio equivalent of the plasma video screen. The speaker consists of three large drivers mounted vertically on a board, with no enclosure save for a wooden frame. The ribbon tweeter occupies the space between one vertical end piece of the frame and a vertical dividing strip, while the midrange/woofer panel occupies the larger space between the dividing strip and the other vertical end piece of the frame. This box-free design eliminates resonance and the colorations introduced by typical loudspeaker enclosures.[1]

The "diplanar" bass panel is the largest of the three drivers—some 786 square-inches in size. This low-mass Mylar diaphragm is infused with evenly spaced wires (which carry the music signals) and suspended between magnets (which provide the power). Unlike electrostatics, planar-magnetic designs do not require large transformers or a connection to an AC outlet to drive the panel. The 137 square-inch "quasi-ribbon" planar-magnetic midrange, although physically attached to one side of the bass panel, is of somewhat different construction and is driven separately from the bass driver. Unlike previous versions of the MG 20, the midrange panels of the 20.1 incorporate a true push-pull magnet structure. The improvement in midrange clarity and definition is the most salient difference between current and prior versions of the speaker.

The most addictive qualities of the 20.1 are its even top-to-bottom tonal balance and realistic portrayal of the soundfield in which the recording was made. Not only does the acoustic space sound lifelike, so do the sizes and place-

[1] Many Maggie owners bemoan the fact that the speaker somewhat flexes on its feet when pushed from the top. I have seen and heard many attempted solutions to this so-called "problem," generally consisting of complete rebuilds of the entire frame, with mixed sonic results (generally very detailed but somewhat dry). I am looking forward to trying the much simpler and modestly priced foot and bracing system manufactured by Mye Sound (myesound.com), which consists of metal feet that will accept spikes and metal brackets that attach well up the back side panels of the speakers.

ment of instruments on the stage. And unlike most speakers, the space and performers sit at a realistic height relative to your listening position—neither lower than stage height nor beaming down on you as if suspended from the rafters. While no home sound system can truly convince you that a life-sized orchestra is laid out before you, the 20.1s come closer than most, and in this regard compete with speakers at any price.

A few words are in order about amplification. Simply put: the more power, the better.

The Maggies are also full-range loudspeakers, slighting the upper frequencies not at all and the lowest frequencies only to a minor extent. The bass is full, quick, and tuneful. It rocks on rock 'n' roll and moves large quantities of air when a symphony orchestra is playing full-tilt. And because the Maggies have no box, there is absolutely no sense of boxiness or cabinet resonance at the lowest frequencies. However, while the bass panels will play satisfyingly loud on almost all types of material, they can be overdriven by very dynamic low-frequency notes played at louder-than-life levels.

The midrange and high-frequency reproduction of the 20.1 is, in my view, state of the art. Whereas the midrange of the older 20 was slightly opaque and did not seamlessly blend with the ribbon tweeter, the new midrange driver of the 20.1 cures those problems. The midrange is transparent, open, and powerful. It seems to be impervious to overload or strain. It certainly isn't lacking body, but because it is a planar design you will not want to use associated equipment on the thin side of neutral. This is probably why I (and many others) prefer tubes with these speakers.

The outstanding ribbon tweeter is delicate, crystal-clear, light, and powerful—all at the same time. But it does have certain operational limitations. While it will play to a very satisfying volume level, it too can be overdriven if some caution isn't exercised. You can generally rock out to your heart's content, but if you also try to rock your neighbors, you will often meet with blown fuses or, worse, blown tweeters. Fortunately, the tweeters are user-replaceable. To put this in context, the 20.1 will play louder, without breakup of any sort, than any full-range electrostat I have heard.

The only other issue with the tweeter is that, depending on the associated equipment, it may tend to some brightness or glare at higher volume levels. If you encounter this problem it is easily remedied by slightly padding down the tweeter with either the supplied resistors or those of your choice. Depending on your room acoustics, the tweeter should need anywhere from no padding to no more than 1.5dB attenuation. The trick is to pad the tweeter down just enough so it does not call attention to itself.

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Design and Setup

The tweeter is a true ribbon and is undoubtedly the manufacturer's crowning achievement. Five feet tall, it is of such low mass that it is nearly featherweight. While not without problems if improperly driven, it is a driver of unsurpassed purity and detail. (I believe that HP has referred to it as possibly the best tweeter in the world, and who am I to argue?)

This entire affair of ribbon, quasi-ribbon, and diplanar bass panels is driven through two moderately complex crossovers. The first is internally mounted and divides the signal between the midrange and tweeter at approximately 3kHz. The second crossover is housed in two large metal boxes, one of which is typically placed behind each speaker. These passive units allow the speakers to be run full-range from a single amplifier, or bi-amplified using a stereo amplifier or two mono amplifiers for each speaker. Because there is no gain adjustment on this crossover, bi-amplification is best accomplished with identical amplifiers.

A few words are in order about amplification. Simply put: the more power, the better. The speaker is very low in sensitivity, with a factory rating of 85dB (and that seems generous). While use of the active crossover seems to lessen the power requirements, I don't believe you will experience the full capabilities of the speakers without at least 300 watts per channel into a 4-ohm load. You will certainly hear music with a less powerful amplifier, but it won't come to life in the same way. My VTL 450s are up to the task, as are other higher-power tube and solid-state amplifiers.

Like all high-end loudspeakers, what you get out of the Maggies largely depends on what you put into them. They are so revealing that it would be a mistake not to use outstanding components and cables upstream. I've heard many great combinations of same, at various price points, that make the 20.1 sound magical, yet to me tubes seem to produce the most magic, especially in the midrange. I have also heard a number of solid-state components I could happily live with.

The speakers are large and require special care in placement because of their dipole radiation pattern. In particular, to enjoy the most they have to offer, it is essential that they not be placed too close to the wall behind them. While some critics grumble that the Maggies "don't do depth," they are sorely mistaken. My listening room is approximately 25 feet long by 16 feet wide and the speakers reside about 6 feet out from one of the short walls. All of the walls are covered, from ceiling to about three feet from the floor, with silk cloth over cotton batting. I generally get outstanding depth of soundstage, or so I thought until I visited a friend whose listening room is much larger and who has at least 15 feet between his 20.1s and the rear wall. In that setting not only is the depth of stage staggering, but the speakers, as large as they are, truly disappear into the acoustic of the recording.

DS

Trying the 20.1s with the Pass Active Crossover

The stock Magnepan crossover works well enough, but I have always wanted to try an active crossover with the 20.1. Pass Laboratories was kind enough to oblige by sending me its XVR1. This is a serious piece of gear, consisting of two beautifully finished chassis (the crossover network itself and a separate power supply). The crossover has only four controls on the front panel—separate volume pots for left and right high pass and for left and right low pass. The back panel offers balanced and single-ended inputs and balanced and single-ended outputs for high and low pass.

A great deal of thought went into the design of this $5000 crossover. Depending on the internal settings chosen, between 6dB and about 17dB of gain (single-ended Class A circuitry) is available in each channel. This should let you match the gain of almost any amplifiers chosen for high- and low-frequency use. Internal jumpers allow the user to use an enormous number of crossover frequencies. More interestingly, each high- and low-pass filter is user-configurable at a 6-, 12-, 18-, or 24dB-per-octave slope, with the choice of three independent Q (sharpness) controls for each filter. Thus, the XVR1 offers almost unlimited crossover flexibility. Additional XVR1s can be added for tri-amp, quad-amp, or even more complex setups. The only things missing for the intrepid speaker-builder is some type of equalizer.

When I initially installed the XVR1, I chose crossover settings almost identical to the Magnepan factory settings. (I subsequently experimented with other settings but ended up preferring the factory ones.) High pass was set at 290Hz with a simple 6dB slope, while low pass was set at 110Hz with an 18dB slope. The Q setting was at "medium" for each. The VTL 450s were used for high-pass amplification and a Sunfire Signature stereo amplifier was used for low-pass duty. The volume controls on the Pass unit allowed precise matching of volume for each amplifier, after a few hours of trial and error on very familiar musical material. My goal was to set the bass level, relative to the mid/highs, as close as possible to the stock Magnepan crossover.

The most immediate effect of the Pass was a greater sense of headroom and dynamics. And while I was using a second amplifier of higher power, I don't think the results were due solely to the additional amp. Even the mids and highs, driven by the VTLs, were more dynamic and alive than before, which could be attributable to one or both of two factors: The VTLs no longer had to reproduce bass frequencies, and they no longer had to drive the Magnepan external crossover. Using an active crossover, you may well be able to drive the mid- and high-frequency sections of the 20.1 with lesser power, and you could also choose a less expensive but still-sufficient amp for the bass.

The Pass unit operated flawlessly and was dead silent. Though transparency through the XVR1 was excellent, I can't really say that the sound was more transparent than though the factory crossover.

So, what's the best way to cross-over the Maggies? The overall sound through the XVR1 was somewhat more open and dynamic than the stock crossover, but I am not talking orders of magnitude. It was ever-so-slightly brighter than the stock unit, but never objectionably so. I also seemed to gain an extra octave of low-frequency extension when using the XVR1, but this was probably a result of substituting the Sunfire amp for the VTLs for bass reproduction. On the other hand, the sound through the factory crossover and the VTLs run full-range was slightly more full-bodied and warm than the bi-amp setup, which is nothing to sneeze at. Overall, I would give a slight nod to the active crossover, especially insofar as it allows you to use separate, and possibly less powerful, amplifiers in a bi-amp setup.

Yet the performance of the Maggies with the stock crossover is always satisfying, and once the cost of the Pass is factored in (as well as the need for an extra set or two of interconnects), the stock setup is by far the most economical way of experiencing the 20.1 magic. **DS**

The most addictive qualities of the 20.1 are its even top-to-bottom tonal balance and realistic portrayal of the soundfield in which the recording was made.

All of the qualities of the 20.1 are highlighted by recordings such as Mahler's *Das Knaben Wunderhorn* [EMI LP], a sensational Christopher Parker recording. The stage is open, lush, and airy, and the walls of your room will effectively disappear (sonically speaking, of course). Fischer-Dieskau's powerful baritone is to the left and somewhat back, while Schwarzkopf's voice floats ethereally from right center stage. The bass drums are shockingly powerful and roll through the room, just as you would experience them live.

Reproduction of strings, large-scale and small, is one of the great strengths of all Magnepan loudspeakers, which beautifully capture the instruments' tone, body, and rosiny bite. In the Shostakovich's Quartet No. 8 [Decca LP], the brooding and ominous strings of the Borodin Quartet completely escape the confines of the speaker. In the Beethoven Cello Sonata No. 1 [EMI CD], Jacqueline du Pré's cello is lyrical and resonant, while Janos Starker's driving performance of Brahms' Cello Sonata No. 1 [Mercury LP] is so alive it's hard to sit still in your chair, and Gyorgy Sebok's piano accompaniment is warmly resonant and natural. Likewise, woodwinds and horns are convincingly lifelike through the 20.1s.

And when you're ready to rock, the Maggie's won't disappoint. My wife's old Jethro Tull and Janis Joplin CDs had her dancing all night. Even an all-out electronic assault like Massive Attack's *Mezzanine* [Virgin CD], so long as not played at ear shattering-levels, delivers (almost) subterranean bass and a strong pulsating beat. Richard Thompson's voice and guitar on *The Old Kit Bag* [Diverse Records, LP] are so palpable and alive that if you close your eyes you might think he and his guitar were in the room.

There's not much that's missing, but as good overall as the 20.1s are they are not perfect. As noted, they will play very loud but won't blow down the walls without unduly stressing the drivers. While the bass is fast, full, and well-defined without boxy colorations, it is

SPECIFICATIONS

Type: Three-way planar-magnetic speaker
Driver complement: Ribbon tweeter, quasi-ribbon midrange, planar-magnetic bass
Frequency Response: 25Hz–40kHz
Sensitivity: 85dB
Impedance: 4 ohms
Recommended power: 100–300 watts
Dimensions: 29" x 79" x 2.06"
Weight: 90 lbs.

ASSOCIATED EQUIPMENT

Basis Gold Debut Turntable; Immedia RPM-2 tonearm; Keotsu Rosewood Platinum Signature and Onyx cartridges; Aesthetix Io Signature phonostage; Aesthetix Callisto Signature linestage; Meitner CDSD transport and DCC2 DAC/preamp; VTL 450 power amps; Sunfire Signature power amp; Transparent Opus, Reference MM, and Reference interconnects and speaker cables; Purist Audio Dominus interconnects and speaker cables; Walker Audio Valid Points and High Definition Links

not the equal of the largest dynamic driver systems in terms of midbass slam or subterranean extension. Instruments and voices have great body but I have heard some cone-and-dome speaker systems that infuse the instruments with a slightly greater sense of reach-out-and-touch-it palpability. Similarly, while the 20.1s are wonderfully transparent and pure, they may be edged out in these regards by the best electrostatic models.

Likewise, imaging is far more than satisfactory (and more precise than what I actually hear live), but may not completely satisfy the needle-in-a-haystack crowd. Finally, percussive sounds like sharply struck piano, rim shots, and woodblocks are ever-so-slightly softer than the real thing.

But picking nits would miss the point of the 20.1. Simply stated, its overall balance of musical virtues is almost peerless. Factor in a relatively affordable price, which is far less than the competition (such as the largest offerings from Wilson, DALI, Rockport, Dynaudio, and Avantgarde), and it must be considered one of audio's great bargains.

MANUFACTURER INFORMATION

MAGNEPAN INCORPORATED
1645 Ninth Street
White Bear Lake, Minnesota 55110
(651) 426-1645
magnepan.com
Price: $12,000

PASS LABS
PO Box 219
Foresthill, California 95631
(530) 367-3690
passlabs.com
Price: $5000

MAGNEPLANAR® MG20.1

Instruction Manual

White Bear Lake, Minnesota

www.magnepan.com

1. INTRODUCTION

Congratulations on your purchase. The Magneplanar® MG20.1 loudspeaker was conceived and designed for perfectionists. One of the most revealing loudspeakers made, the MG20.1 will provide outstanding music reproduction when used With high quality components.

2. GENERAL DESCRIPTION

Your Magneplanar MG20.1 speaker system consists of a pair of mirror-imaged, Fabric and wood trimmed panels, labeled "1" and "2" (for identification). Each panel Contains one, five-foot long ribbon tweeter and one, mid/bass planar-magnetic driver. The Planar-magnetic driver consists of a quasi ribbon midrange section and a bass section, employing opposing magnet plates. The MG20.1's can be bi-amplified or bi-wired. The midrange to treble crossover components are housed in the speaker panel and are non- defeatable.

For single amplifier operation, a passive external crossover is supplied.

3. ACCESSORY CARTON CONTENTS

4 - Speaker Support Feet
8 - Speaker Support Bolts
2 - 3 Amp Normal Blow Fuses (Tweeter)
2 - 5 Amp Normal Blow Fuses (Midrange)
4 - Wooden Handles
50 -Black Ribbon Tweeter Mounting Screws
2 - Speaker Emblems
1 - Allen Wrench
2 - 1 Ohm Resistors

4. IMPORTANT PRECAUTION

The foil element in the ribbon tweeter is quite fragile. Handle them with extreme care when removing them from the carton. DO NOT remove the protective strip from the ribbon until the MG20.1 is fully assembled and the tweeters are installed.

RUPTURED RIBBON ELEMENTS ARE NOT COVERED UNDER THE WARRANTY.

5. PACKAGING

Save all packaging, including ribbon tweeter packing! If you need to transport the speaker they can be shipped safely only in the original packaging. You may never have to ship or move your loudspeakers, but should the occasion arise, they should not be shipped in any packaging but the original. Should you discard it, factory packaging is available, including the special packaging for the ribbon tweeters.

6. ASSEMBLY

You will note there are 4 wooden handles with threaded shafts. These are for attaching to the back side of the panels (2 each) to facilitate moving the speakers around. There are holes approximately 26 inches from the lower end of the panels for mounting these handles.

The four support feet for the MG20.1 speakers are shipped in the separate accessory carton along with the eight mounting bolts. Two feet must be fastened to the back side of each of the panels. The nuts are already installed in the panels.

A) Lay a speaker on its side as shown in Figure 1. We suggest you have a second person hold the speakers during installation to ensure they do not fall.

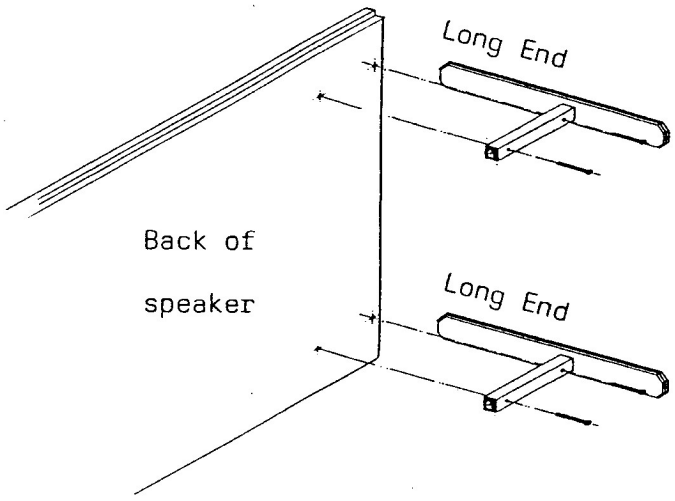


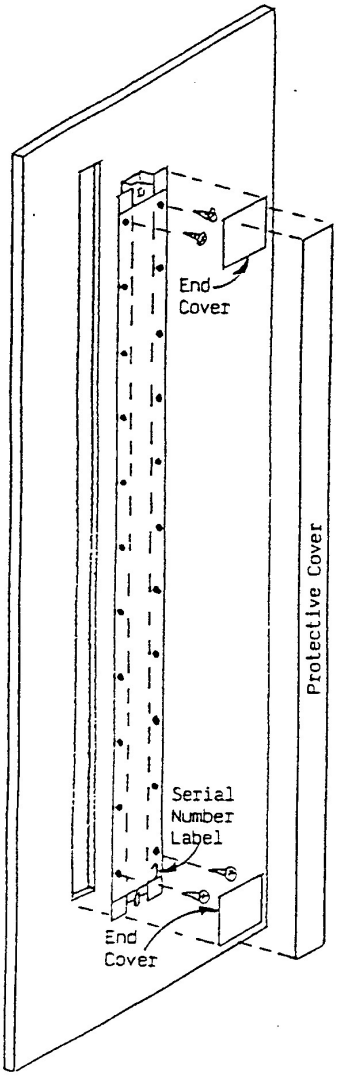
Figure 1

B) Locate the four holes in the fabric along back side of the panel.
C) Note that one section of the support feet is slightly longer than the other. Place the longer section toward the front of the speaker.
D) Align the holes in the foot with the holes in the panel. Using your fingers, insert the bolts through the foot and into the panel until they engage nuts in the panel. Care should be taken so the bolts do not cross-thread. Final tightening is done with a No. 2 Phillips screwdriver.
E) Repeat Steps C & D for the remaining feet.

There are threaded holes on the bottom of each speaker support which may be used to install spikes for installation on deep carpeting if desired.

7. RIBBON TWEETER

The foil element in your MG20.1 line source tweeter is only .00015" thick, and is very fragile. Handle with extreme care. PLEASE READ FUSING ON PAGE 5. To lessen the risk of damage, the ribbon tweeters are shipped separately. Refer to the following instructions for installation.



RIBBON TWEETER INSTALLATION / REMOVAL

INSTALLATION

A. Mer the speaker has been stood upright, install the new ribbon tweeter in the frame. Serial number label must be at the bottom.
B. Insert the screws. Tighten until snug, then back off 1/2 revolution.
C. Remove protective cover and attach the wire to the ribbon terminals.
D. Peel liner from back of end covers and adhere to each end of tweeter.

REMOVAL

A. Pry away the two end covers.
B. Remove the wire at each end of the ribbon tweeter.
C. Remove the screws that attach the ribbon tweeter to the frame and then remove the tweeter.

CAUTION: Do not bump or touch the ribbon at end terminals.

TOOLS NEEDED: #2 Phillips Screwdriver

8. FUSING

Your MG20.1's have been shipped with 3 amp fuses installed for the tweeter, and 5 amp fuses for the midrange. The fuses are Type 3AG normal blow fuses, and should never be replaced with slow blow fuses.

The maximum MIDRANGE fuse value shown on the speaker terminal plate is 5 amps. Under no circumstances should you exceed this value, or use slow blow fuses- doing so will invalidate your warranty.

"Clean" breaks of the ribbon foil are usually due to metal fatigue and may be covered under the terms of the warranty. Twisted, distorted or limp foil is usually caused by excessive power (from improper fusing), or sudden changes in air pressure and may not be covered under the terms of the warranty.

9. CABLE HOOKUP

The MG20.1's feature high-current cable connectors which provide optimum contact area with speaker cables up to 10 gauge. To prepare cables, strip 1/2-inch of insulation from the end of the cable. Insert the bare wire into the connector and tighten the set-screw with the Allen wrench provided. Spade lug adapters are available from your Magneplanar dealer for speaker cables that are incompatible with the Magneplanar high-current connector.

10. SINGLE AMPLIFIER OPERATION

For single amplifier operation an XO20.1 Passive Crossover has been supplied with your speakers.

A. Angle brackets have been provided for attaching the XO20.1 Crossover to the feet of the MG20.1's. This will ease moving and positioning the MG20.1's. Loosen top screws on back of feet, just enough to slip angle brackets on. Align the 4 gold connectors on the crossover to speaker inputs and place crossover on angle bracket. Tighten set screws.

B. Connect the amplifier speaker cables to the input of the XO20.1 Crossover box.

C. Every connection point on the XO20.1 Crossover is marked plus (+) or negative (-). Make a choice as to which lead is either positive or negative and make sure all connections are consistent with the marking. **DOUBLE-CHECK YOUR CONNECTIONS!** One mistake will put your system out of phase.

D. Bi-Wiring Option. Bi-wiring requires two sets of speaker cables. They may be identical, or one set may be specialized for high frequencies and the other specialized for low frequencies.

1. Remove both jumpers on the XO20.1 Crossover.
2. Connect one set of cables to the low cable input and the other set to the high cable input. Connect the other end of the cables together (observe +/- polarity), and connect to one channel of the amplifier outputs. If frequency specialized cables are used, connect them to their respective inputs. In either case the other ends are connected to the same amplifier channel.
3. Repeat same procedure for the other channel.

11. BI-AMPLIFICATION

The MG20.1 is conveniently arranged for hi-amplification. To hi-amplify, two stereo amplifiers (four channels of amplification) and an electronic crossover are required. For hi-amplifying with a conventional electronic crossover, connect the system as shown in Figure 2.

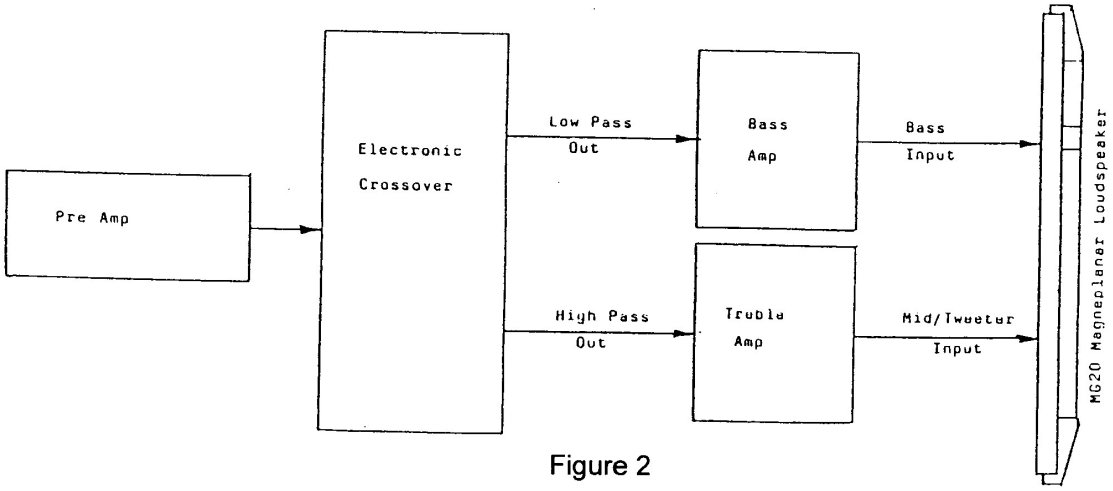


Figure 2

Set the high pass section at 200-300 Hz, 6dB per octave. Due to standing waves at the crossover frequency, the low pass section may require adjustment from as low as 90Hz (12dB Bessel) to 150Hz (15dB Butterworth). Typical settings are in the middle of this range. Optimization of the low pass can be done by ear (with music) or spectrum analysis.

With the crossover points set as listed above, the power requirements for the bass and mid/treble amps are nearly the same. Therefore, use amplifiers of similar power rating. It is suggested to use amplifiers rated at 100 watts RMS or greater, into 8 ohms.

Some amplifiers invert is phased correctly between phase and this test serves to double-check the entire system the bass and midrange.

12. SPEAKER PLACEMENT

Proper speaker placement and room acoustics can have more effect on a music system than upgrading one of the components in the system. Unfortunately, there is no definitive guideline which will cover all possible listening rooms. Some experimentation is required for locating the optimum position. The following are a few general guidelines:

TWEETER PLACEMENT

Room acoustics and your own personal tastes will determine whether to position the panels with the tweeters on the inside or outside edge. In most rooms placing them on the outside will give good dimensionality. Placing them on the inside will, in most cases, increase the central focus and improve imaging. For proper phasing between midrange and tweeter, the speakers should be toed in slightly. Align the foot below the tweeter with the listening position as shown in Figure 3.

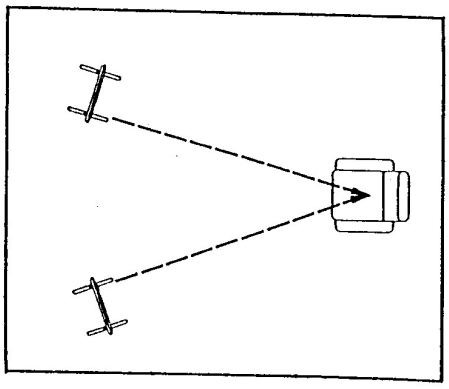


Figure 3

BASS RESPONSE

If you do not have access to a spectrum analyzer, play a record with a repetitive bass line (preferably an acoustical bass instrument). Try the speakers in several parts of the room. Start experimenting with the speakers about 3 feet from the back wall. Try moving the speakers forward or backward by increments of 6 to 12 inches at a time. One part of the room should be noticeably better than the rest, as should one distance from the rear wall.

STEREO WIDTH AND IMAGING

Once you have located the best position for the speakers and your chair for good bass performance, separate the tweeters by 50% of the distance from your chair to the speakers. (For example, if your chair is 10 feet from the speakers, move the tweeters 5 feet apart.) Now move the speakers apart in increments of 3 or 4 inches at a time, listening carefully at each position. At some point you will start to hear two separate speakers instead of getting a "stage effect" (or continuous image). If you have a hole-in-the-middle effect, your speakers are too far apart: begin moving the speakers closer together in small increments until you notice a point at which you achieve one cohesive "sound stage."

NOTE: Once you have located the ideal position you should mark it. A small tack or piece of tape can be placed on the carpet so your ideal listening spot can be easily relocated when the speakers (or chair) are moved for cleaning, etc. The entire placement procedure may seem like a great deal of work, but is necessary in the setup of any high quality system. The time and effort expended should be necessary only once, and will repay the owner with countless hours of musical enjoyment.

13. ROOM ACOUSTICS

Magneplanars, like other bipolar speakers, usually sound best with a moderately reflective surface behind the speakers. In situations where the speakers must be placed closer than 2 feet from the back wall, a heavy damping material directly behind the speakers is advised; however, it should not cover the entire wall.

Damping material in other parts of the room is a matter of trial and error. A word of caution-when audiophiles discover the effectiveness of damping material, they sometimes overdo it (on the premise that if a little is good, more is better). Before you make a permanent change to your room, experiment with the positioning of the damping material. Usually a portion of one of two parallel walls should have some damping.

An over damped room will provide very precise imaging, but you will have a reduced sense of ambience (less reverberation, spaciousness). An under damped room may heighten the illusion of being in a concert hall, but the imaging will seem imprecise with all the instruments mixed together. Moderation is the word.

14. OPTIONAL RIBBON TWEETER ATTENUATION

There are two principal reasons for needing to attenuate the Magneplanar Ribbon Tweeter:

A) Recordings, typically in the "pop" or "rock" vein, often exhibit a pronounced rise in the treble region.
B) The Magneplanar Ribbon Tweeter is very efficient in its total "energy dispersion." If the surrounding walls are exceptionally reflective, the overall perceived acoustical balance will be tipped towards a "hot" high end.

Attenuation is performed through insertion of a simple non-inductive resistor in series with the tweeter.

There are inputs provided on the connector plate of each speaker for insertion of a resistor. To insert a resistor simply loosen the Allen screws, remove the jumper, insert the resistor, and tighten the screws. A 1 ohm non-inductive resistor will attenuate the tweeter approximately 2dB. Other values can also be used and are available from your Magneplanar dealer.

15. MAINTENANCE

The wood trim can be cleaned and polished with a damp cloth. In the event the speaker's fabric is damaged or soiled, replacement covers are available. **DO NOT VACUUM TWEETER CHANNEL!**

16. SERVICE AND SHIPPING

In the unlikely event you should need service for your MG20.1 loudspeakers, we recommend you return them through your dealer. He is experienced in providing service and can assist you if the speakers must be returned to the factory.

If it is determined that your speakers must be returned for repair, ship them (freight prepaid--ask for Rate Class 100 via truck) to: Magnepan, Incorporated, 1645 Ninth St., White Bear Lake, MN 55110. Include a packing slip or letter describing the nature of the problem. Please include your name, address, and a daytime telephone number.

Before packaging, very carefully install steel protector strips overdue ribbon tweeters and remove the ribbon tweeters, following the removal instructions on Page 4. Do not let the steel strips slap against the magnets.

17. TWEETER REPLACEMENT

Because the foil element in your MG20.1 line source tweeter is only .00015 inches thick, it is very fragile. Some users will never require a replacement tweeter. Failure will generally occur from mishandling, or from improper fusing. Users who frequently push the 3 amp tweeter fuse capacity will be the most likely to experience early failure. The tweeter has been designed to be easily replaced, requiring only a screwdriver. The time required should be less than 30 minutes.

If you have a defective tweeter, you should contact your dealer for a replacement. Your defective unit will be returned to Magnepan for installation of a new foil element at a minimal charge to you: there is no charge if it is within the one-year warranty period that covers the foil element and Magnepan determines that there is no evidence of abuse.

DO NOT SHIP A TWEETER BACK TO MAGNEPAN WITHOUT CONTACTING YOUR DEALER OR MAGNEPAN FIRST.

Tweeters must be returned in authorized containers only.

Tweeters that are damaged in shipment are the responsibility of the customer.

18. MG20.1 SPECIFICATIONS

System Description	3-Way, Combination Diplanar® Bass/Diplanar Quasi Ribbon Midrange and True Ribbon Tweeter
Bass Section	786 Square Inches Planar-Magnetic
Midrange Section	137 Square Inches Quasi-Ribbon Planar Magnetic
Tweeter Section	5/32 Inch Wide, 60 Inches Long
*Frequency Response - Ribbon Driver	±3dB from **25Hz to 40kHz
Polar Response - Ribbon Driver	180 Degrees Horizontal Dispersion Both Front and Back to 20kHz
Recommended Power	100-300 Watts RMS (8 Ohms rated) - For further information, see FAQ on web site at http://www.magnepan.com/faq.php#power
Sensitivity	2.828v., 500Hz, 86dB @ 1 Meter
Impedance	4 Ohms
Crossover System	Low-pass (bass): 18dB Butterworth @108Hz High-pass (midrange/tweeter): 6dB @330Hz *Crossover between midrange and tweeter is approximately 3000Hz and is non-defeatable.*
Dimensions	29" x 79" x 2-1/2"
Finish	Panels trimmed with natural oak, black oak, or dark cherry; covered With off-white, black or gray fabric
Warranty	Limited. Non-transferable-Ribbon foil element, 1 Year Balance of speaker - 3 Years
Shipping Weight	285 Lbs. with Accessory Packages

*Because there are no universally accepted methods for loudspeaker measurement, frequency response specifications may be stated by most manufacturers without reference to measurement techniques and/or specific locations in rooms. Magneplanar loudspeaker frequency response curves are minimum average performance levels that may reasonably be expected in normal installations.

**New Magneplanar MG20.1 speakers will not display their full bass potential. After a month or two of use the bass response will lower 5Hz or more. At this point the response will be realized. While this 5Hz or more of lower bass response is important, the most important factors in obtaining good bass response from the MG20.1 speakers are room size and geometry, wall material, and speaker placement.